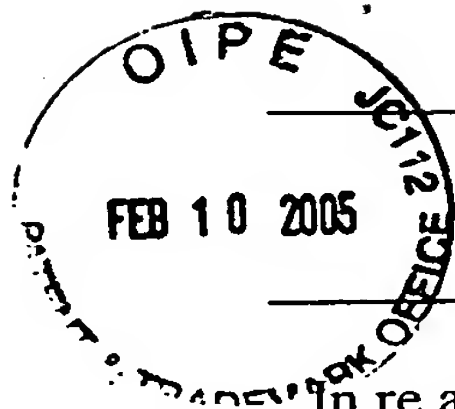


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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Corbalis et al.

Attorney Docket No.: CALIP006/P051

Patent: 6,819,815 B1

Issued: November 16, 2004

Title: METHOD AND APPARATUS FOR  
INDIRECT ADJUSTMENT OF OPTICAL  
SWITCH REFLECTORS

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first-class mail on February 7, 2005 in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Signed: \_\_\_\_\_

Aurelia M. Sanchez

**REQUEST FOR CERTIFICATE OF CORRECTION  
OF OFFICE MISTAKE  
(35 U.S.C. §254, 37 CFR §1.322)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Attn: Certificate of Correction

RECEIVED  
FEB 11 2005  
CERTIFICATES OF CORRECTION

Dear Sir:

Attached is Form PTO-1050 (Certificate of Correction) at least one copy of which is suitable for printing. The errors together with the exact page and line number where they occur, and shown correctly in the application filed, are as follows:

**SPECIFICATION:**

1. Column 21, line 8, change "to illustrative" to --to be illustrative--. This appears correctly in the patent application as filed on December 12, 2001, on page 31, line 1.

**CLAIMS:**

1. In line 2 of claim 3 (column 21, line 51) change "bean monitoring" to --beam monitoring--. This appears correctly in Amendment A as filed on May 14, 2004, on page 4, paragraph 2, line 2.

FEB 14 2005

2. In line 1 of claim 6 (column 21, line 64) change “the bear” to --the beam--. This appears correctly in Amendment A as filed on May 14, 2004, on page 4, paragraph 5, line 1.

3. In line 22 of claim 17 (column 23, line 9) change “pass through” to --passes through-- This appears correctly in Amendment A as filed on May 14, 2004, on page 6, paragraph 3, line 4, as claim 57.

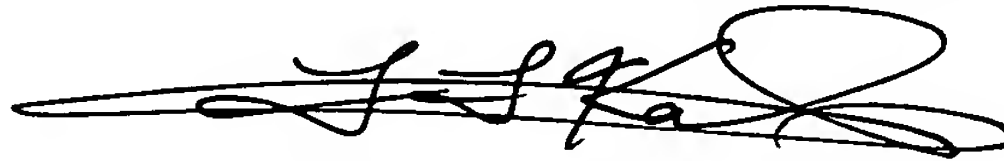
4. In line 1 of claim 20 (column 24, line 7) change “us in claim” to --as in claim--. This appears correctly in Amendment A as filed on May 14, 2004, on page 7, paragraph 4, line 1, as claim 60.

5. In line 5 of claim 20 (column 21, line 11) change “we optical” to --the optical--. This appears correctly in Amendment A as filed on May 14, 2004, on page 8, paragraph 1, line 1, as claim 60.

Patentee hereby requests expedited issuance of the Certificate of Correction because the error lies with the Office and because the error is clearly disclosed in the records of the Office. As required for expedited issuance, enclosed is documentation that unequivocally supports the patentee's assertion without needing reference to the patent file wrapper.

It is noted that the above-identified errors were printing errors that apparently occurred during the printing process. Accordingly, it is believed that no fees are due in connection with the filing of this Request for Certificate of Correction. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 500388 (Order No. CALIP006).

Respectfully submitted,  
BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read 'F. T. Kalinski, II.', with a long horizontal flourish extending to the left.

Frank T. Kalinski, II.  
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intended to be illustrative rather than limiting. The inventions illustratively disclosed herein can be practiced without any element which is not specifically disclosed herein.

partially reflective surface onto the array of beam monitoring elements, and such that the working beam passes through the partially reflective surface onto the array of output channels.

**Claim 3 (original):** An optical switch as in Claim 1 wherein the optical information provided by the beam monitoring element enables the adjustment of the working beam to adjust for positional misalignment errors and angular misalignment errors so that the working beams enter the output channels having desired optical characteristics.

**Claim 4 (original):** An optical switch as in Claim 3 wherein a single beam monitoring element measures optical power in a monitor beam such that both the angular misalignment and the positional misalignment of a working beam can be detected and adjusted.

**Claim 5 (currently amended):** An optical switch as in Claim 1 ~~[[3]]~~ wherein the first and second detector elements of each beam monitoring element comprise a position sensitive detector. ~~includes means for measuring the monitor beam thereby determining the positional misalignment and angular misalignment in the working beam.~~

**Claim 6 (original):** An optical switch as in Claim 1 wherein the beam monitoring elements provide optical information used to adjust the working beams such that the beams enter the output channels having a desired optical power.

**Claim 7 (original):** An optical switch as in Claim 6 wherein the desired optical power is an optimal amount of optical power.

**Claim 8 (currently amended):** An optical switch as in Claim 1, wherein the first beam splitter is included as part of a rhomboid prism assembly which is positioned such that the monitor beams and the working beams exit the rhomboid prism assembly substantially parallel to each other.

**Claim 16 & 17 (cancelled).**

**Claim 18 (currently amended):** An optical switch as in Claim 1 [[10]] wherein each beam monitoring element includes: ~~comprises~~:

the first detector element comprising a first quadrature detector element; and

the second detector element comprising a second quadrature detector element. ; and

~~— a second beam splitter for reflecting a portion of the light of the into the second quadrature detector element and for passing another portion of the light of the monitor beam through the second beam splitter into the first quadrature detector element.~~

**Claim 19 (currently amended):** An optical switch as in Claim 1 [[18]] wherein the portion of the light measured by the first quadrature detector element provides information used to determine and adjust the position of the working beam; and

wherein the another portion of the light measured by the second quadrature detector element is used, in conjunction with the portion of the light measured by the first quadrature detector element, to provide information used to determine and adjust the angle at which the working beam enters the output channels.

**Claims 20-56 (cancelled).**

**Claim 57 (new):** A beam monitoring element comprising:

a first light block having formed therein, a first aperture;

a monitor lens; and

a detector element for detecting a monitor beam after it passes through the first aperture and passes through the monitor lens wherein the monitor beam provides positional misalignment information concerning a working beam associated with the monitor beam.

**Claim 58 (new):** An optical switch incorporating the beam monitoring element of Claim 57, wherein the switch comprises:

an array of optical input channels each capable of carrying an associated input light beam;

an array of output channels;

an array of said beam monitoring elements;

a switching array for coupling selected input channels to selected output channels enabling the switching of each input light beam to one of a plurality of output channels;

a beam splitter optically interposed between the switching array and the array of output channels to split input light beams into a monitor beam and a working beam; and

wherein each beam monitoring element measures one of the monitor beams to provide optical information used for adjusting the switching array such that the working beams enter the output channels having desired optical characteristics.

**Claim 59 (new):** An optical switch as in Claim 58 wherein the detector element includes a small surface area sized such that the monitor beam passing through the first aperture and passing through the monitor lens and impinging on the small detector element provides information regarding the angular misalignment of the working beam.

**Claim 60 (new):** An optical switch as in Claim 58 the detector element comprises:

a second light block positioned to block a monitor beam from impinging on the detector element;

a second aperture formed in the second light block to reveal a surface area of the detector element, enabling the monitor beam reach the detector element;

wherein the second aperture is sized to reveal a surface area on the detector element such that the monitor beam passing through the first aperture and passing through the monitor lens and impinging on the small detector element provides information regarding the angular misalignment of the working beam.

**Claim 61 (new):** An optical switch as in Claim 60 wherein the first aperture has approximately the same cross-sectional dimensions as the monitor beam; and wherein the second

aperture has approximately the same cross-sectional dimensions as the optical mode of the monitor beam.

**Claim 62 (new):** An optical switch as in Claim 60 wherein the first aperture has approximately the same cross-sectional dimensions as the monitor beam.

**Claim 63 (new):** An optical switch as in Claim 60 wherein the second aperture has approximately the same cross-sectional dimensions as the optical mode of the monitor beam.

**Claim 64 (new):** An optical switch as in Claim 58 wherein the monitor lens is positioned with respect to the detector element such that a monitor beam passing through the monitor lens is focused on the surface of the detector element.

**Claim 65 (new):** An optical switch as in Claim 58 wherein the monitor lens is positioned with respect to the detector element such that a monitor beam passing through the monitor lens is not focused on the surface of the detector element.

**Claim 66 (new):** An optical switch comprising:

- an array of optical input channels each capable of carrying an associated input light beam;

- an array of output channels;

- a switching array for coupling selected input channels to selected output channels enabling the switching of each input light beam to one of a plurality of output channels;

- a beam splitter optically interposed between the switching array and the array of output channels to split input light beams into a monitor beam and a working beam;

- an array of beam monitoring elements arranged to receive monitor beams, each beam monitoring element comprising:

- a monitor lens;

- a monitor fiber;



(Also Form PT-1050)

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,819,815 B1  
DATED : November 16, 2004  
INVENTOR(S) : Corbalis et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

### In the Specifications:

Column 21, line 8, change "to illustrative" to --to be illustrative--.

### In the Claims:

In line 2 of claim 3 (column 21, line 51) change "bean monitoring" to--beam monitoring--.

In line 1 of claim 6 (column 21, line 64) change "the bear" to --the beam--.

In line 22 of claim 17 (column 23, line 9) change "pass through" to --passes through--.

In line 1 of claim 20 (column 24, line 7) change "us in claim" to --as in claim--.

In line 5 of claim 20 (column 21, line 11) change "we optical" to --the optical--.

MAILING ADDRESS OF SENDER:

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PATENT NO. 6,819,815 B1

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FEB 14 2005